Environmental Assessment

National Petroleum Reserve-Alaska

3D Seismic Program

2010

DOI-BLM-LLAK010-2010-0002-EA

ConocoPhillips Alaska

Preparing Office: Arctic Field Office

Project Title/Type of Action: **National Petroleum Reserve-Alaska (NPR-A)**

3D Seismic Program

Case File Number: **FF095634**

Land Use Plans: **Northeast National Petroleum Reserve-Alaska Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) 2008**

Applicant: ConocoPhillips Alaska

Address: 700 G Street
Anchorage, Alaska 99501

Date: January 22, 2010

Lands Involved:

Land Description (BLM Managed Lands)

Proposed New Seismic Legal Description (All Umiat Meridian)

Township	Range	Section(s)
12 North	1 East	21-28, 33-36
12 North	2 East	13-36
11 North	1 East	1-4, 10-15, 22-27, 34-36
11 North	2 East	1-36 (Includes Selected Lands)
11 North	3 East	11-36 (Includes Selected Lands)
11 North	4 East	19-20,30 (Includes Selected Lands)
10 North	1 East	1, 2, 11-14, 23-25, 36
10 North	2 East	1-36 (Includes Selected Lands)
10 North	3 East	1-23, 26-35
10 North	4 East	6, 7, 17, 18
9 North	1 East	1
9 North	2 East	3-6

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GLOSSARY

AHRS The Alaska Heritage Resource Survey is a data base maintained by the State of Alaska, Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology (State Historic Preservation Officer). This inventory of cultural and paleontological resources includes objects, structures, buildings, sites, districts, place-names and travel ways, with a general provision that they are over 50 years old. To date over 22,000 sites have been reported within Alaska (however, this is probably only a small percentage of the sites that may actually exist but are as yet unreported).

ANILCA The Alaska National Interest Lands Conservation Act passed in 1980, modified and established designation of federal lands in Alaska for conservation and wilderness. These lands are managed by the National Park Service, US Fish and Wildlife Service, and US Forest Service.

COLVILLE RIVER UNIT The original Colville River Unit ("CRU") was approved in March of 1998. The boundary of the CRU has been revised several times and currently encompasses approximately 127M acres in the Colville River Delta, North Slope Alaska. The lands within the CRU are located in whole or in part in the following townships and ranges: T10N-R4E, T10N-R5E, T11N-R3E, T11N-R4E, T11N-R5E, T12N-R3E, T12N-R4E, T12N-R5E, T13N-R3E, T13N-R4E, and T13N-R5E. Production from the CRU was commenced in November 2000, and it currently contains five productive participating areas.

FLPMA – The Federal Land Policy and Management Act of 1976 is a Public Law 94-579 passed by Congress October 21, 1976 that gave direction to the way in which the public lands administered by the Bureau of Land Management are managed.

GRAYWATER - Discharge that includes wastewater from any or all of the following: kitchen sink, shower, drinking water, and laundry.

NPRA National Petroleum Reserve Alaska, formally named The Naval Petroleum Reserve #4(NPR-4) is an area of more than 23 million acres in the northernmost part of Alaska, and was established by executive order on February 27, 1923.

NPRPA The Naval Petroleum Reserves Production Act of 1976 (PL 94-258), dated April 5, 1976, transferred jurisdiction of NPR-4 to the Secretary of the Interior and renamed it the NPR-A. This act authorized the Secretary to begin further petroleum exploration and closed the NPR-A to all forms of appropriation under the public land laws, including mining and mineral leasing laws.

Environmental Assessment
for 3D Seismic
DOI-BLM-LLAK010-2010-0002-EA

Chapter 1 Introduction

ConocoPhillips Alaska (CPAI) has requested authorization to conduct a 3 dimensional seismic program in the Northeast (NE) National Petroleum Reserve-Alaska (NPR-A). CGGVeritas (Veritas) would be conducting the work for CPAI. The proposed activity would take place between permit issuance through May 31, 2010.

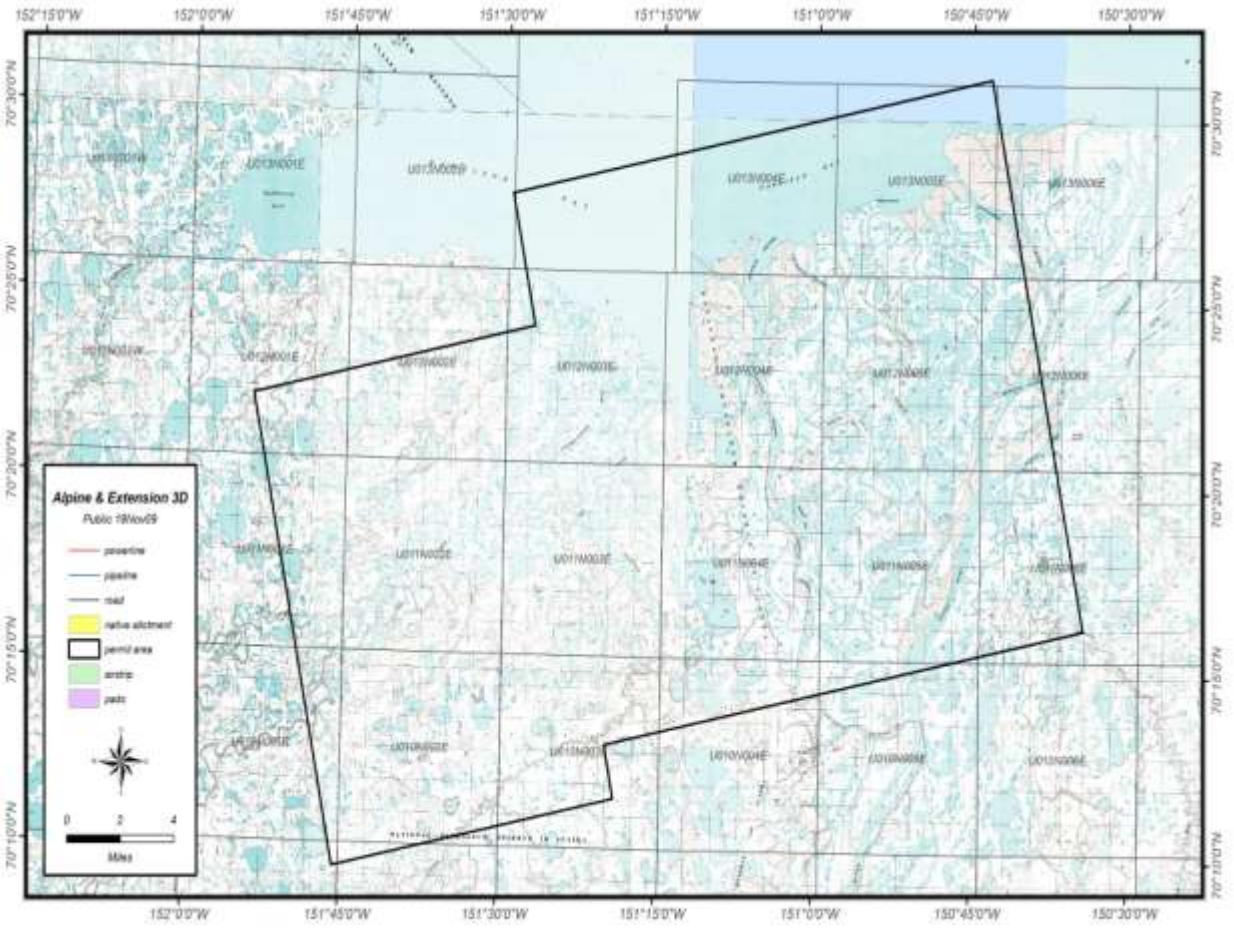

Figure 1: Proposed ConocoPhillips Alaska Public Project Area Map

1.1 **Need for Action**

The need for this project is to allow the applicant to conduct a 3D Seismic Survey in support of oil and gas activities. The Naval Petroleum Reserves Production Act of 1976 authorized the Secretary of the Interior to manage the NPR-A in a manner consistent with the total energy needs of the nation. The need for this project is consistent with that need.

1.2 Purpose of Action

The objective of this project is a new 3D seismic survey to be acquired over the core of CPAI's Colville River Unit Area. This survey, known as the Alpine 3D Survey, would cover approximately 165 square miles and replace portions of the existing 1996 Colville 3D Survey. The existing 13 year old 3D dataset is at the end of its technical life and has served its intended purpose, whereas a more technically advanced 3D dataset is now needed to improve the subsurface imaging and guide future development decisions. This new 3D survey would reduce risk and benefit the continuing development drilling program from late 2010 forward, in all areas covered by this program. The proposed Alpine 3D dataset is designed to reduce the uncertainty by increasing spatial and vertical resolution within the Alpine, Kuparuk, Nanuq, & Qannik intervals, resulting in better imaging and definition of the various depositional settings, reservoir faulting and internal stratigraphic reservoir architecture.

1.3 **Laws, regulations, other NEPA documentation that influence this EA.**

This EA will be based on the findings, management controls, and protective measures of the NE NPR-A Supplemental Integrated Activity Plan/ Environmental Impact Statement (SIAP/EIS) and the 2008 NE NPR-A SIAP/EIS ROD, as well as other laws and regulations. The action, as proposed, is consistent with the objectives outlined in these documents and not in conflict with other resources in the area. The proposed use is in conformance with current policy of the Arctic Field Office, BLM.

The proposed action is in conformance with the NE SIAP/EIS, associated ROD, National Petroleum Reserve Product Act (NPRPA), Federal Land Policy Management Act (FLPMA), Alaska National Interest Lands Conservation Act (ANILCA) Endangered Species Act, Executive Order (EO) 11988, EO 11990, and terms of the federal leases.

1.4 Decision to be made

The BLM must conduct a project-specific NEPA analysis and determine whether the proposed project should be approved, rejected, or approved with modifications, and if additional mitigation is needed. The scope of this EA includes analysis that enables the BLM to select among alternatives that meet the purpose and need, and are within the BLM's jurisdiction (40 Code of Federal Regulations 1506.1(a) (2)).

1.5 Scoping and Issues

For this project, the Applicant met with representatives from Barrow, and Nuiqsut in December 2009 to discuss issues of public interest. No major issues with the proposed exploration program were identified.

BLM guidelines include a list of issues that are addressed, where applicable, in NEPA assessments, (BLM, 2008, Appendix 1). Some elements are not present in the project area and are, therefore, not discussed further. A summary listing of related issues considered is provided in **Table 1.1**.

Table 1.1 Issues Considered in Evaluating Impacts

Issue Considered in Evaluating Impacts	Determination	Basis of Determination (See Note)
Air Quality	No Impact	Protection provided by: State of Alaska Air Non-point and Mobile program and regulations (18 AAC 50)
Cultural and Paleontological Resources	No Impact	Protection provided by: ROP E-13, I-1 and Section 106 of the National Historic Preservation Act Project Specific Stipulation #3(See Note 3)
Subsistence	Potentially Affected	Protection provided by: ROP H-2
Environmental Justice	No Impact	Protection provided by: ROP H-2
Waste (Hazardous/Solid)	No Impact	Protections provided by ROP A-1, A-2, A-3, A-4, and A-5
Water Resources	No Impact	Protections provided by: ROPs A-3, A-4, A-5, B-1, B-2, C-3, C-4.
Flood Plains/Wetlands and Riparian Zones	No Impact	Protections provided by: ROPs A-3, A-4, A-5, C-2, C-3, C-4.And EO 11988 and EO11990
Invasive, Non-native species	Not Present	Protections provided by: ROPs A-4, A-5, C-2, C-3, C-4.
Native American Religious Concerns	No Impact	Protections provided by: ROP I-1
Recreation	Not Present (See Note 2)	Protections provided by:
Public Health	Not Present	Protections provided by:
Socialcultural Systems	Not Present	Protections provided by:

Vegetation	No Impact	Protections provided by: ROP C-2
Visual Resource Management	No Impact	Protections provided by: ROPs A-1, A-4, A-5, C-2, C-3
Wild & Scenic Rivers	Not Present	Protections provided by:
Wilderness	Not Present	Protections provided by:
ACECs	Not Present	Protections provided by:
Threatened & Endangered Species Eiders Polar bear	Not Present Potentially Affected	Protection provided by Section 7 of the Endangered Species Act, ROP A-4, A-5, E-9 Letter of Authorization for the Incidental and Intentional Take of polar bears issued under sections 101 (a) (4) (A) (c), 109(h) and 112(c) of the Marine Mammal Protection Act. In accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA), issuance of these LOAs also fulfills the requirements for Tier 2 Consultation of the Programmatic Biological Opinion. ROP A-2, A-4, A-5, A-8, C-1
Fish	Potentially Affected	Protection provided by: ROP A-4, A-5, B-1, B-2, C-3, C-4. Project-specific stipulations 1 and 2. EFH finding is "not likely to adversely affect".
non-T&E birds	No Impact	Protection provided by ROP A-2, A-4 – A-7, E-9, E-10, E-9-b
non-T&E mammals	No Impact	Protection provided by ROP A-2-a, A-8, C-1, E-9-b and F-1-b

Notes:

1. Determination tiered from: 2008 NE IAP/EIS Vo1. 2, Chapter 4; and 2008 NE ROD; and laws and regulations as noted.
2. There are currently no permitted recreation activities in the timeframe of proposed action.
3. Approximately 10 known cultural sites are located within the boundaries of the proposed action, all of which are listed on the AHRS. Both ConocoPhillips and CGG Veritas have the AHRS data and are therefore in a position to assure that buffer zones are maintained and the sites protected.

ROP- Required Operating Procedure

In summary, BLM resource specialists have identified the following issues for further evaluation in this EA: 1) Subsistence, 2) Threatened and Endangered Species 3) Fish 4)

1.6 Public Involvement

Development of the 2008 NE IAP/EIS involved extensive input from other Federal agencies, the State, the NSB, thousands of individuals, and many institutions. A number of permits and approvals are required for oil and gas related work. These are described in the 2008 NE IAP/EIS (Vol. 5, Appendix B), many of which are available for public review prior to agency decision-making. **Table 1.2** summarizes permits and approvals associated with the proposed project.

Table 1.2 Federal, State, or Local Permits

Federal	
United States Environmental Protection Agency	Alaska Pollutant Discharge Elimination System (APDES) General Permit for Mobile Spill Response Unit
United States Fish and Wildlife Service	Letter of Authorization (LOA) Polar Bear Incidental Take
Bureau of Land Management	Geophysical Exploration Permit
State	
Alaska Department of Natural Resources, Division of Oil and Gas	Geophysical Exploration Permit Statewide Miscellaneous Land Use Bond Indemnification Paragraph Coastal Zone Questionnaire
Office of Habitat Management and Permitting	Fish Habitat Permit
Alaska Department of Environmental Conservation	Kitchen/Potable Water Permits Individual Permit – Graywater discharge
Local	
North Slope Borough	Land Management Development Permits Inupiat Heritage Language and Culture
Kuukpik Corporation/ ASRC Corporation	Non-Objection

Chapter 2 Alternatives Including the Proposed Action

2.1 Introduction

This chapter both describes the alternatives (potential actions) and compares the alternatives in terms of their environmental impacts (from Section 1.5) and their achievement of objectives (from Section 1.2).

2.2 Description of Alternatives

2.2.1 Alternative A: No Action

Under No Action, the Bureau of Land Management would not grant an authorization to CPAI to conduct a 3D Seismic Program. The current situation as described below would continue. See Chapter III (Affected Environment) for a more detailed profile of the current environmental situation.

This alternative would prevent the applicants from performing necessary pre-exploration activity to locate possible sources of oil and gas. The No Action Alternative is inconsistent with the

existing management policy of the Fairbanks District Office, but its analysis is a NEPA requirement

2.2.2 Alternative B: Proposed Action

The proposed action as submitted by the applicant is to conduct a 3 Dimensional Seismic Program in the NPR-A. Access and travel to the proposed area would be determined based on weather, snow cover, ice depths and logistical considerations. CPAI would hire CGC Veritas to conduct the work. Veritas would initially stage at Deadhorse, Alaska. From there they would truck the materials to the work site or stage at Kuparuk and mobilize from there. Veritas has submitted four initial mitigation measures that they would implement depending on the need:

1.In seasons of low snow cover, CGGVeritas shall fly the route with a Division of Mining, Land and Water [Land] or Oil and Gas representative and identify the optimum camp move routes that best minimize impacts to tundra tussock vegetation and other sensitive natural resources.
2.CGGVeritas shall consult with Division of Mining, Land and Water [Land] prior to Tundra opening about naturally occurring snow-pack and current snow conditions, and shall pre-pack routes to the initial camp sites if recommended or authorized by the Division of Mining, Land and Water [Land].
3.CGGVeritas shall provide a description of efforts to consolidate and coordinate activities with other operators, and seek out maps of vegetation types in the area that may assist crews in avoiding tundra tussock vegetation.
4.CGGVeritas shall work with other operators to avoid duplication of tundra ice road or ice trail construction, damages and impacts. CGGVeritas shall consider cost-sharing alternatives to minimize economic, environmental, and physical, waste as well as consolidation of facilities and transit routes and bridges when practicable.

Seismic Operations

Seismic operations would be conducted utilizing 12-14 tracked vibrators supported by tracked cable trucks. Receiver lines would be spaced approximately 660-770 ft apart; a group of 3 geophones would be located every 110 feet along the line to receive a response from the subsurface. Sixteen to twenty receiver lines may be placed on the ground at any one time. On receiver lines where large non-ground fast lakes exist, hydrophone/swamp phone placement below the ice may also be conducted. This would require drilling through the ice to allow placement of the geophone (or hydrophone) cable on the lake bed or directly under the ice layer.

Source lines will be spaced approximately 660-770 ft apart; and the vibroseis points will be acquired every 110 ft. along the line. The source is a standard Vibroseis with a frequency of approximately 4 to 100 Hz; the anticipated duration is 4-8 seconds for each sweep. The duration and decibel level of the source varies depending on such factors as terrain and weather conditions; however, the levels are so low that hearing protection is not required for seismic crew members.

Crew personnel would typically work a 12-14 hour workday. Crew operations would operate 24 hours a day. The anticipated length of the proposed action is 3 months. The project would cover approximately 165 square miles.

Camp Facilities

The 125-150 man (approximate) camp would consist of sled-mounted units including a kitchen and diner, sleeping areas, washrooms, offices, shops, generator rooms, and storage compartments. The camp would be moved 1 or 2 miles every few days, depending on progress of the survey.

Potable water would be produced with a skid-mounted snow melter or by withdrawing water from permitted lakes using an approved screen intake structure. Greywater (up to 3500 gallons/day) would be filtered and discharged onto tundra as authorized by ADEC/EPA's Alaska Pollutant Discharge Evaluation System general permit. A skid-mounted incinerator would be used for garbage. Ash from the incinerator would be back-hauled to the North Slope Borough disposal facility in Deadhorse, Alaska.

During the active work season, crews would travel to the camp area either by personnel carrier or by plane into the Alpine airstrip.

Fuel Supply and Storage

Fuel for the proposed project would travel by land. A total of 4,500 gallons of fuel would be the average daily consumption. The total capacity of sled mounted tanks would be approximately 26,000 gallons (five-4,000 gallon tanks and two-3000 gallon tanks; all are double-walled construction.) Fuel stations would be located at least 500 feet from any waterbody and would not be stored on the active floodplain of any waterbody. Pink dye would be added to all diesel fuel prior to transport to the Project to aid in spill detection.

Training Program

All crewmembers would receive North Slope Environmental and Cultural Awareness training, operational safety and polar bear awareness training.

Deviation Request

ConocoPhillips Alaska, Inc. (CPAI) has requested a deviation from ROP A-9 found in the 2008 NE NPR-A SIAP/EIS ROD requirement regarding the use of low-sulfur diesel. The 3D Seismic project would be supported by operations at Alpine's main production facility which will not begin the transition from diesel to ultra-low sulfur diesel until July 2010. CPAI plans to begin transferring diesel for use at Alpine using the AHF pipeline in July 2010 during the annual shutdown activities; however, it would take several months to convert existing fuel storage tanks. CPAI anticipates a complete conversion of the Alpine field to ULSD by October 2010.

Chapter 3 Affected Environment

Environmental characteristics of the general project area have been extensively described in the 2008 NE NPR-A IAP/EIS (Vol. 1, Chapter 3), to which this analysis is tiered, with some site-specific features described below.

Based on the proposed project and the issues analysis in Section 1.5, the following discussion of the affected environment covers Subsistence, Threatened and Endangered Species, and Fish.

3.1.1. Subsistence

The proposed 3-D seismic project is located within the Barrow and Nuiqsut subsistence use areas (USDOI-BLM 2008a, Map 3-35). Barrow, a community of over 4,500 residents is located approximately 200 miles to the northwest of the project area. Nuiqsut, a community of 403 residents, is located within the general project area. The primary subsistence use of the area during the proposed project dates of February 2010 through May 2010 will be by residents of Nuiqsut, for the purposes of caribou, small mammal, bird and furbearer hunting. Under ice fishing may also occur during the latter part of the project timeline. Many residents may simply travel through the project area in order to access hunting cabins or camps located outside of the project area. Access will primarily be by snow machine.

3.1.2 Threatened and Endangered Species

The polar bear, listed as threatened in May 2008, is the only listed animal species likely to be present in the ConocoPhillips 3-D Seismic areas during project activities. Polar bears may be found all year along the Beaufort Sea coast or on off-shore ice. Pregnant female polar bears select denning sites on land or on sea-ice in October or November, giving birth in the December or January time and abandoning their dens and moving offshore with their cubs by the end of March or beginning of April. Den sites have previously been identified close to the Eskimo Islands, Atigaru Point, and Cape Halkett. The USF&WS have produced maps that identify potential denning habitat on some of the coastline involved in this project. **ConocoPhillips Alaska has applied for a Letter of Authorization (LOA) for the Incidental and Intention Take of polar bears from USF&WS, and agreed to comply with USF&WS mitigation measures and to provide BLM with a copy of the Service issued Letter of Authorization for the Incidental and Intentional Take of polar bears issued under sections 101 (a)(4)(A)(c), 109(h) and 112(c) of the Marine Mammal Protection Act prior to beginning on the ground activities. In accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA), issuance of this LOA also fulfills the requirements for Tier 2 Consultation of the Programmatic Biological Opinion for the activities described within.**

The threatened spectacled and Steller's eiders are migratory summer visitors to the area, and would not be expected to be present during the March-May project timeframe. The eiders begin moving into the arctic coastal plain in late May to early June, and depart in late August.

3.1.3 Fish

Details on fish species, distribution, and life histories can be found in the NE NPR-A Supplemental IAP/EIS (USDOI 2008). The most common fish species found in streams, rivers, and lakes in the area of proposed action include Alaska blackfish, Arctic cisco, Arctic grayling, broad whitefish, burbot, humpback whitefish, least cisco, ninespine stickleback, round whitefish, slimy sculpin. However, other less common Arctic fish species may also be found in the region. Overwintering fish habitat in the Arctic is extremely limited; freezing temperatures reduce stream habitat by up to 95 percent, portions of the low salinity near-shore coastal habitat freeze, and unfrozen coastal waters are supercooled (i.e. $<0^{o}$ C) (Craig 1989). Because waterbodies typically freeze to about 6 feet in depth during winter, water depths of 7 feet or more are considered the minimum for supporting overwintering freshwater fish.

There are no Arctic fish species on the BLM Species of Special Concern list. However, species in the area of proposed action that are targeted for the local winter subsistence harvest include Arctic cisco, broad whitefish, and burbot.

Chapter 4 ENVIRONMENTAL IMPACTS

Because the proposed activities are not substantially different from those previously evaluated, and because no significant new scientific information or analyses have been developed since the most recent related evaluation (i.e., May 2008), this NEPA analysis will focus on impacts due to the project-specific/site-specific differences of the proposed action.

4.1 Direct and Indirect Effects

The proposed action is built on experience gained from decades of similar operations on the North Slope. This EA is tiered from the 2008 NE IAP/EIS and its ROD. Related discussions of impacts is found in: 2008 NE NPR-A IAP/EIS, Vol. 2, Chapter 4.6 (Environmental Consequences of Alternative D, the preferred alternative).

Issues specifically identified in Section 1.5 for further analysis in this EA are discussed below.

4.1.1 Subsistence

4.1.1.1 No Action Alternative

Under the No-Action Alternative, CPAI would not conduct a seismic exploration on BLM, State of Alaska, and Kuukpik Corporation lands. No activity would occur within the subsistence use areas for the communities of Barrow and Nuiqsut, therefore, no potential displacement of resources from the area would occur. There would be no impacts to subsistence resulting from overland moves or the camps associated with the seismic activity.

4.1.1.2 Proposed Action

The proposed project involves winter activity in an area with important subsistence value. While the wintertime is not the primary season for subsistence harvesting, it is the principal time period for furbearer harvesting. Other subsistence activities that occur during the winter, and thus could be impacted by the proposed seismic program, include caribou, small mammal, and bird hunting. These activities are frequently based from subsistence cabin or camp locales, which are accessed during the winter by snow machine. Ice fishing may also occur.

The proposed 3-D seismic shoot, as well as the associated access route, are located in an area utilized by subsistence harvesters from Nuiqsut and Barrow. The primary activity associated with the project that could affect subsistence use is the overland movement of the seismic camp over a large area relatively near the community. The 125-150 man camp consists of sled-mounted units including a kitchen and diner, sleeping areas, washrooms, offices, shops, generator rooms, and storage compartments. The camp would be moved 1 or 2 miles every few days, depending on progress of the survey. Local knowledge, as elicited through public testimony at NPR-A SAP meetings, indicates that seismic activity displaces resources from the area of effect. This displacement can lead to hunters having to travel further to harvest resources. In most cases, these activities are expected to cause only short-term, minor displacement and/or disturbance, usually only the time period in which the activity or camps are active.

Mitigation measures that minimize impacts to subsistence use have been adopted by the BLM (USDOI-BLM 2008b), including winter-only exploration, measures that protect fish and wildlife, and consultation requirements by the company with affected communities. The 3-D seismic program proposed by CPAI is primarily located on State of Alaska and Kuukpik Corporation lands near the community of Nuiqsut. The Kuukpik Corporation is the local Nuiqsut Village Corporation formed under ANCSA, and has been working closely with CPAI and the Kuukpik Subsistence Oversight Panel to ensure minimal impacts to subsistence use as a result of the proposed activity. CPAI has developed a Subsistence Plan that includes the use of local subsistence advisors to identify and help mitigate potential impacts of the proposed project

to subsistence use. The plan also includes methods for increased communication between the community and the company.

4.1.2 Threatened and Endangered Species-Polar Bear

4.1.2.1 No Action Alternative

Under the No-Action Alternative, CPAI would not conduct a seismic exploration on BLM, State of Alaska, and Kuukpik Corporation lands. Therefore, no potential disturbance to denning polar bears would occur.

4.1.2.2 Proposed Action

There is potential for direct effects (incidental take) to polar bears from this project through disturbance (by vehicle traffic and human activities during project mobilization, seismic shooting and demobilization) of denning female bears. Disturbance may cause premature abandonment of den sites and may result in the death of cubs. Bears could also be attracted to garbage and debris at camps. Intentional take of denning polar bears will be mitigated using measures specified in the LOA from the USF&WS.

There will be no direct impacts to the two threatened eider species, as they are not found in the area of concern at the time that the permitted activities will occur. There is potential for indirect impacts to these eiders due to impacts to wetland and riparian vegetation that these eiders use when they are present in the permit area but no "take" of either eider species is anticipated.

4.1.3 Fish

4.1.3.1 No Action Alternative

Under the No-Action Alternative there would be no 3D seismic survey and thus no potential impacts from overland travel, vibroseis noise, or under-ice placement of hydrophones.

4.1.3.2 Proposed Action

Under the Proposed Action, Alternative B, the potential impacts on fish that require further analysis include those from vibroseis noise and from lowering geo-phones to lakebeds under the ice. Other fish habitat concerns are adequately protected under ROPs listed in Table 1.5.

In 2003, the Alaska Department of Natural Resources, Office of Habitat Management and Permitting (OHMP), in consultation with the BLM, North Slope Borough, and WesternGeco, conducted a study to address concerns about impacts to fish from vibroseis-based seismic

exploration (Morris and Winters 2005). Based on the examination of organs and tissue of exposed fish, results provided no evidence that vibroseis causes a direct impact of acute mortality or physical injury to fish that would lead to mortality or significant loss of function. However, during a similar time period, other research demonstrated that high-intensity noise can lead to damaged auditory sensory hair cells in fish, effectively reducing the ability to hear (McCauley et al. 2003; Popper 2003; Smith et al. 2004; Popper et al. 2005). To date, it is unknown if vibroseis noise can have this effect on fish.

In the 2003 ADNR study the primary, indirect impact of vibroseis on overwintering fish appeared to be a behavioral response, swimming rapidly away from the sound source. While a fleeing response can be energy intensive for a fish, adverse impacts are unlikely during routine seismic exploration if fish in a particular overwintering area are only exposed to the noise one time as the shot line passes overhead. Alternatively, the intensity of the flight response observed in the 2003 ADNR study suggests that multiple exposures could have a significant negative impact on overwintering fish.

The proposed action may also include lowering hydrophones to the lake bed under the ice in deep lakes (i.e. where liquid water is present). This presence of liquid water in large lakes equates to highly probable fish overwintering habitat. However, while drilling a hole in the ice and lowering equipment through the water column could cause fish to disperse, this action by itself is not likely to have a negative impact on fish that are present.

Due to the unknown impact of vibroseis noise on auditory sensory hair cells in fish and the intensity of the flight response observed in the 2003 ADNR study, the permitee is required to take precautionary steps to mitigate the potential for significant negative impacts on overwintering fish. Project-specific stipulations 1 and 2 (Section 4.3 are adapted from recommendations made in the ADNR study (Morris and Winters 2005).

An Essential Fish Habitat (EFH) Assessment for salmon was completed for the proposed action, as required by the National Marine Fisheries Service. The finding is "*not likely to adversely affect*" and no EFH consultation is required.

4.2 Cumulative Effects

Cumulative impacts result from the incremental addition of past, present, and reasonably foreseeable actions. Each action may be individually minor by itself, but when added to others could become significant over a period of time.

The time frame for the proposed action for the project area is 1977 (designation of NPR-A) to 10 years into the future, assuming that the relatively low level of activity and management would remain at about the same level as present. Due to the limited scope and intensity of the proposed action the geographic area would be limited within 1 mile of the proposed use area. Additional past, present, and future activities in the area include recreation, subsistence, and research and monitoring. While the level of such activities may increase slightly within the next 10 years, there are no development proposals that would substantially add to the current levels. The

incremental addition of the proposed action would be short-term and highly localized and would not add to increased cumulative effects.

The proposed action is not anticipated to result in cumulative impacts due to the remoteness of the portion of the area where the activity would occur, the low impact levels associated with the activity.

4.2.1 Subsistence

BLM protective measures have been applied in the NPR-A during the winter operational season without any significant individual or collective direct, indirect, or cumulative impacts to subsistence resources. Activity levels are expected to be similar in the future, such that cumulative impacts are expected to remain insignificant. In addition, a stipulations and ROPs have been developed to avoid the potential for significant restriction of subsistence uses or access to subsistence resources (USDOI BLM 2008b).

Seismic exploration projects and the potential for concurrent operations within and adjacent to the NPR-A have been discussed with local residents through meetings with the local communities, NSB, regulatory and resource agencies in order to minimize project-specific and cumulative effects to subsistence resources or access.

In addition to winter activities such as oil and gas exploration, clean-up work and research, summer activities including studies, monitoring, and recreational use occur in the NPR-A. These include aircraft support for fish and wildlife studies, as well as inspections of proposed drilling sites and abandonment inspections. Helicopters are frequently used as the basic means of air support. Helicopter activity can result in deflection of wildlife and disturbance to people engaged in subsistence activities. This disturbance is usually localized to the area in which the helicopter is operating, and temporary in nature, in that it only occurs during the period in which the activity is taking place. Fixed wing aircraft are used for local passenger and freight transportation, subsistence, and recreation. Although every effort is made to minimize the effects of aircraft activity, aircraft transportation is crucial to many activities. Summer activities in the NPR-A require separate BLM authorization(s), with associated assessment of potential environmental impact.

4.2.2 Threatened and Endangered Species-Polar Bear

Polar bears could be affected cumulatively from oil and gas exploration, clean-up work at sites such as Drew Point, subsistence activities, as well as research and monitoring activities from scientists, industry, and agency personnel. The increased activity associated with this project would add a slight, temporary increase in potential disturbance to polar bears. Mitigation measures described in the USFWS issued Letter of Authorization would reduce the frequency and proximity of disturbance. There would be no incremental increase in human activity with the no action alternative.

4.2.3 Fish

As discussed in the 2008 NE IAP/EIS (Section 4.7.7), restricted winter habitat for fish in the Arctic makes many species highly vulnerable to the impacts of surface activities. Some effects such as oil and gas exploration, clean-up work and research, may accumulate, but due to protective measures, effects to fish at the population level are not likely.

4.3 MITIGATION AND MONITORING

The stipulations (Appendix A) for the proposed action are a subset of the 2008 NE NPR-A SIAP/EIS ROD, BLM Alaska State Office Stipulations for Seismic Activity and project specific stipulations developed in the NEPA process.

The BLM will incorporate the following additional mitigation measures into approval for the ConocoPhillips Alaska Seismic Permit. ConocoPhillips Alaska shall:

1. When permittee or their contractor is conducting any activity associated with this authorization they will provide the BLM with a short weekly activities summary report via e-mail to: Donna_Wixon@blm.gov and SWalker@blm.gov.

2. When operating vibroseis rigs over or immediately adjacent to potential fish overwintering areas (water ≥7 feet deep, ice plus liquid depth), only a single set of Vibroseis "shots" should be conducted with an associated receiver line.

3. Multiple days of vibroseis activity over or immediately adjacent to potential fish overwintering areas should be avoided.

4. Approximately 10 known cultural sites are located within the boundaries of the proposed action all of which are listed on the Alaska Heritage Resource Survey (AHRS). All of the known cultural site locations within the project area must be given a 150 foot buffer. Both CGG/Veritas and CPAI have the AHRS data and are therefore in a position to assure that the buffer zones are maintained and the sites protected.

5. Permittee and their contractor are required to adhere to the United States Fish and Wildlife requirements found in ConocoPhillps Alaska's Letter of Authorization for the incidental take of polar bears.

4.4 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The potential issues that were identified in the evaluation of the proposed action for this EA were Subsistence, Threatened and Endangered Species-Polar Bear and Fish. The analysis found that impacts would be short term and localized and that mitigation measures in Appendix A would

adequately reduce any adverse effects to identified issues in the area. Likewise, the analysis also found that mitigation measures would adequately reduce any adverse effects to Subsistence, Threatened and Endangered Species-Polar Bear, and Fish which would also be short term and localized. The proposed action would not contribute to significant cumulative effects to Subsistence, Threatened and Endangered Species-Polar Bear, or Fishing the proposed project areas

Chapter 5 Consultation and Coordination

5.1 Agencies, Organization, Persons Consulted

Public notification of the Environmental analysis will be on file at the Arctic Field Office and available on the Arctic Field Office Environmental Assessment web site.

5.2 List of Preparers

Dave Yokel, Wildlife Biologist
Michael Kunz, Archaeologist
Susan Flora, Environmental Scientist
Richard Kemnitz, Hydrologist
Donna Wixon, Natural Resource Specialist
Debbie Nigro, Wildlife Biologist
Matthew Whitman, Fish Biologist
Stacie McIntosh, Anthropologist/Subsistence Specialist
Roger Sayre, NEPA Specialist

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USDOI-BLM 2008b Northeast National Petroleum Reserve-Alaska Final Supplemental Integrated Activity Plan/Environmental Impact Statement. Record of Decision.

APPENDIX A: FF095634 ConocoPhillips Alaska Seismic Authorization Stipulations/Required Operating Procedures January 22, 2010

The following stipulations/mitigation measures are project specific resulting from the Environmental Assessment for this project.

1. When permittee or their contractor is conducting any activity associated with this authorization they will provide the BLM with a short weekly activities summary report via e-mail to: Donna_Wixon@blm.gov and SWalker@blm.gov.

2. When operating vibroseis rigs over or immediately adjacent to potential fish overwintering areas (water ≥7 feet deep, ice plus liquid depth), only a single set of Vibroseis "shots" should be conducted with an associated receiver line.

3. Multiple days of vibroseis activity over or immediately adjacent to potential fish overwintering areas should be avoided.

4. Approximately 10 known cultural sites are located within the boundaries of the proposed action all of which are listed on the Alaska Heritage Resource Survey (AHRS). All of the known cultural site locations within the project area must be given a 150 foot buffer. Both CGG/Veritas and CPAI have the AHRS data and are therefore in a position to assure that the buffer zones are maintained and the sites protected.

5. Permittee and their contractor are required to adhere to the United States Fish and Wildlife requirements found in ConocoPhillps Alaska's Letter of Authorization for the incidental take of polar bears.

NE IAP/EIS ROD
Stipulations and Required Operating Procedures

Waste Prevention, Handling, Disposal, Spills, Air Quality, and Public Health and Safety:

A-1 Required Operating Procedure
Objective: Protect the health and safety of oil field workers and the general public by disposing of solid waste and garbage in accordance with applicable Federal, state, and local law and regulations.
Requirement/Standard: Areas of operation shall be left clean of all debris.

A-2 Required Operating Procedure
Objective: Minimize impacts on the environment from non-hazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil field workers and the general public. Avoid human-caused changes in predator populations.
Requirement/Standard: Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the AO for approval, in consultation with Federal, state, and NSB regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application. Management decisions affecting waste generation shall be addressed in the following order of priority: 1) Prevention and reduction, 2) recycling, 3) treatment, and 4) disposal. The plan shall consider and take into account the following requirements:
a. Methods to avoid attracting wildlife to food and garbage. All feasible precautions shall be taken to avoid attracting wildlife to food and garbage. (A list of approved precautions, specific to the type of permitted use, can be obtained from the AO.)
b. Disposal of putrescible waste. Requirements prohibit the burial of garbage. Lessees and permitted users shall have a written procedure to ensure that the handling and disposal of putrescible waste will be accomplished in a manner that prevents the attraction of wildlife. All putrescible waste shall be incinerated, backhauled, or composted in a manner approved by the AO. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with USEPA and ADEC regulations and procedures. The burial of human waste is prohibited except as authorized by the AO.
c. Disposal of pumpable waste products. Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection in accordance with USEPA, ADEC, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by ADEC, will be allowed as necessary to facilitate annular injection and/or backhaul operations.
d. Disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by a NPDES or state permit.

A-3 Required Operating Procedure
Objective: Minimize pollution through effective hazardous-materials contingency planning.
Requirement/Standard: For oil- and gas-related activities, a Hazardous Materials Emergency Contingency Plan shall be prepared and implemented before transportation, storage, or use of

fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of Best Management Practices (BMPs) if approved by the AO. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of Federal, state, and NSB contacts. Other Federal and state regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures. In addition contingency plans related to facilities **developed** for oil production shall include requirements to:
a. provide refresher spill-response training to NSB and local community spill-response teams on a yearly basis,
b. plan and conduct a major spill-response field-deployment drill annually,
c. prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve - Alaska operating area. Planning shall include development and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's operating area and areas outside the lessee's operating area that could be affected by their activities. (The specific area to be mapped shall be defined in the lease agreement and approved by the AO in consultation with appropriate resource agencies). Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the AO in consultation with appropriate Federal, state, and NSB resource and regulatory agencies.

A-4 Required Operating Procedure
Objective: Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes and marine waters, as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.
Requirement/Standard: Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees **shall develop a comprehensive spill prevention and response contingency plan** per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:
a. On-site Clean-up Materials. Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc…) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.
b. Storage Containers. Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the AO that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of water bodies, fuel containers are to be stored within appropriate containment.

c. Liner Materials. Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.
d. Permanent Fueling Stations. Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.
e. Proper Identification of Containers. All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.
f. Notice of Reportable Spills. **Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the AO as soon as possible, but no later than 24 hours after occurrence**.
g. Identification of Oil Pans *("duck ponds").* All oil pans shall be marked with the responsible party's name.

A-5 Required Operating Procedure
Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment**.**
Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception of small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, will be permitted. The AO may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

A-8 Required Operating Procedure
Objective: Minimize conflicts resulting from interaction between humans and bears during leasing and associated activities.
Requirement/Standard: Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. **These plans shall include measures to:**
a. Minimize attraction of bears to the drill sites.
b. Organize layout of buildings and work areas to minimize human/bear interactions.
c. Warn personnel of bears near or on drill sites and identify proper procedures to be followed.
d. Establish procedures, if authorized, to discourage bears from approaching the drill site.
e. Provide contingencies in the event bears do not leave the site or cannot be discouraged by authorized personnel.
f. Discuss proper storage and disposal of materials that may be toxic to bears.
g. Provide a systematic record of bears on the site and in the immediate area.
h. Encourage lessee/permittee to participate and comply with the Incidental Take Program under the Marine Mammal Protection Act.

Water Use for Permitted Activities:

B-1 Required Operating Procedure
Objective: Maintain populations of, and adequate habitat for, fish and invertebrates.
Requirement/Standard: Water withdrawal from rivers and streams during winter is prohibited.

B-2 Required Operating Procedure
Objective: Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish and invertebrates, and waterfowl.
Requirement/Standard: Water withdrawal from lakes may be authorized on a site-specific basis depending on water volume, and depth, and fish population and species diversification. Current water withdrawal requirements specify:
a. Lakes that are ≥7 feet with sensitive fish (any fish except ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; lakes that are between 5 and 7 feet with sensitive fish, water available for withdrawal would be calculated on a case by case basis.
b. Lakes that are ≥ 5 feet with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet.
c. Any lake with no fish present, regardless of depth, water available for withdrawal is up to 35% as specified within the permit.
d. A water-monitoring plan may be required to assess draw down and water quality changes before, during, and after pumping any fishbearing lake or lake of special concern.
e. The removal of naturally grounded ice may be authorized from lakes and shallow rivers on a site-specific basis depending upon its size, water volume, and depth, and fish population and species diversification.
f. Removed ice aggregate shall be included in the 15% or 30% withdrawal limits–whichever is the appropriate case–unless otherwise approved.
g. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. Note: All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Natural Resources (ADNR).
h. Compaction of snow cover or snow removal from fish-bearing water bodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.

The following lease stipulations and ROPs apply to overland moves, seismic work, and any similar cross-country vehicle use of heavy equipment on nonroaded surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.

Winter Overland Moves and Seismic Work:

C-1 Required Operating Procedure
Objective: Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.
Requirement/Standard:
a. Cross-country use of heavy equipment and seismic activities is prohibited within ½ mile of occupied grizzly bear dens identified by the ADFG unless alternative protective measures are approved by the AO in consultation with the ADFG.

b. Cross-country use of heavy equipment and seismic activities is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators shall consult with the USFWS and/or NOAA Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.

C-2 Required Operating Procedure

Objective*:* Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

Requirement/Standard:

a. Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500 feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the AO.

b. Only low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. A list of approved vehicles can be obtained from the AO. Limited use of tractors equipped with wide tracks or "shoes" will be allowed to pull trailers, sleighs or other equipment with approved undercarriage. Note: This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.

c. Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.

d. To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.

e. The location of winter ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.

f.. Motorized ground-vehicle use within the CRSA associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within the Colville River Raptor, Passerine, and Moose Area from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain ½ mile away from known raptor nesting sites, unless authorized by the AO.

C-3 Required Operating Procedure

Objective: Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality and protect stream banks.

Requirement/Standard: Crossing of waterway courses shall be made using a low-angle approach. Snow and ice bridges shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris. Except at approved crossings, operators are encouraged to travel a minimum of 100 feet from known overwintering fish streams and lakes.

C-4 Required Operating Procedure

Objective: Avoid additional freeze-down of deep-water pools harboring over-wintering fish and invertebrates used by fish.

Requirement/Standard: Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers and streams shall be crossed at shallow riffles from point bar to point bar whenever possible.

Facility Design and Construction:

E-6 Required Operating Procedure
Objective: Reduce the potential for ice-jam flooding, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage.
Requirement/Standard: Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, reduce erosion, maintain natural drainage, and minimize adverse effects to natural stream flow. Note: Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.

E-9 Required Operating Procedure
Objective: Avoidance of human-caused increases in populations of predators of ground nesting birds.
Requirement/Standard:
a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the AO with an annual report on the use of oil and gas facilities by ravens, raptors and foxes as nesting, denning, and shelter sites.
b. Feeding of wildlife is prohibited and will be subject to noncompliance regulations.

E-10 Required Operating Procedure
Objective: Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.
Requirement/Standard: Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.

E-11 Required Operating Procedure
Objective: Minimize the take of species listed under the Endangered Species Act and minimize the disturbance of other species of interest from direct or indirect interaction with oil and gas facilities.
Requirement/Standard: In accordance with the guidance below, before the approval of facility construction, aerial surveys of the following species shall be conducted within any area proposed for development. Special Conditions in Spectacled and/or Steller's Eiders Habitats:
a. Surveys shall be conducted by the lessee for at least 3 years before authorization of construction, if such construction is within the USFWS North Slope eider survey area and at least 1 year outside that area. Results of aerial surveys and habitat mapping may require

additional ground nest surveys. Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol during the second week of June.
b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall consult with the USFWS and BLM in the design and placement of roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, construction of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and introduction of high noise levels.
c. To reduce the possibility of spectacled and/or Steller's eiders colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized:
1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;
2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or
3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.
d. To reduce the likelihood of spectacled and/or Steller's eiders colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low flying birds. Such markings shall be developed through consultation with the USFWS.
Special Conditions in Yellow-billed Loon Habitats:
a. Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August.
b. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot (500-meter) buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.

E-13 Required Operating Procedure
Objective: Protect cultural and paleontological resources.
Requirement/Standard: Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the AO and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO.

E-14 Required Operating Procedure
Objective: Ensure the passage of fish at stream crossings.
Requirement/Standard: To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices (BMPs) outlined in "Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain" by McDonald et al. (1994), "Fundamentals of Culvert Design for Passage of Weak-Swimming Fish" by Behlke et al. (1991), and other generally accepted best management procedures prescribed by the AO. To adhere to these BMPs, at least three years of hydrologic and fish data shall be collected by the lessee for any proposed crossing of a stream whose structure is designed to occur, wholly or partially, below the stream's ordinary high water mark. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream.

E-16 Required Operating Procedure
Objective: Prevent or minimize the loss of raptors due to electrocution by power lines.
Requirement/Standard: Comply with the most up to date industry accepted suggested practices for raptor protection on power lines. Current accepted standards were published in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* in 2006 by the Avian Power Line Interaction Committee (APLIC) and are updated as needed.

E-17 Stipulation/ROP *(This measure is to be incorporated as a stipulation in new and renewed leases. It is a ROP for existing leases and will be required for any relevant permanent facilities.)*
Objective: Minimize impacts to important spectacled eider nesting habitat.
Requirement/Standard: With the exception of pipelines, no a.) permanent oil and gas facilities, b.) material sites, or c.) staging areas that would occupy land through more than one winter season would be permitted in spectacled eider nesting and breeding habitat identified by the USFWS as being "high" density (>1.06 eiders per square mile) using the best available long-term data from the Annual Eider Breeding Survey at the time development is proposed.

Use of Aircraft for Permitted Activities:

F-1 Required Operating Procedure
Objective: Minimize the effects of low-flying aircraft on wildlife, traditional subsistence activities, and local communities.
Requirement/Standard: The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (Note: This ROP is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and ROPs. **However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data):**
a. Aircraft shall maintain an altitude of at least 1,500 feet above ground level (AGL) when within ½ mile of cliffs identified as raptor nesting sites from April 15 through August 15 and within ½ mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.

b. Aircraft shall maintain an altitude of at least 1,000 feet AGL (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the AO. The AO will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.
c. Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. **The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights**. Proposed aircraft use plans should be reviewed by appropriate Federal, state, and Borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the AO if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered so as to allow larger aircraft to be employed, resulting in fewer flights to the facility.
d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.
e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet AGL (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area (Map 1) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area (Map 2) should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.

Subsistence Consultation for Permitted Activities:

H-1 Required Operating Procedure
Objective: Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and oil and gas and related activities.
Requirement/Standard: Lessee/permittee shall consult directly with affected communities using the following guidelines:
a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the NSB, and the National Petroleum Reserve - Alaska Subsistence Advisory Panel to discuss the siting, timing and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities.
b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to provide an adequate time for review and comment by the National Petroleum Reserve - Alaska Subsistence Advisory Panel and to allow time for formal Government-to- Government consultation with Native Tribal governments.

The applicant shall submit documentation of its consultation efforts and a written plan that shows how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Operations plans must include a discussion of the potential effects of the proposed operation, and the proposed operation in combination with other existing or reasonably foreseeable operations.
c. A subsistence plan addressing the following items must be submitted:
1. A detailed description of the activity(ies) to take place (including the use of aircraft).
2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the AO during the consultation process.
3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.
4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.
5. Procedures necessary to facilitate access by subsistence users to conduct their activities. In the event that no agreement is reached between the parties, the AO shall consult with the directly involved parties and determine which activities will occur, including the timeframes. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the AO and Subsistence Advisory Panel. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the planning area shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the NSB to minimize impacts from the proposed barging on subsistence whaling activities.

H-2 Required Operating Procedure
Objective: Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.
Requirement/Standard: In addition to the consultation process described in ROP H-1 for permitted activities, before applying for permits to conduct geophysical (seismic) exploration, the applicant shall 1) consult with local communities and residents and 2) notify the local Search and Rescue organizations of current and recent seismic surveys. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.
a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will **notify in writing** all potentially affected long-term cabin and camp users.
b. The official recognized list of cabin and campsite users is the NSB's 2001 (or most current) inventory of cabins and campsites.
c. A copy of the notification letter and a list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.

d. The AO will prohibit seismic work within 1 mile of any known, long-term, cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the AO. (Regardless of the consultation outcome, the AO will prohibit wintertime seismic work within 300 feet of a known long-term cabin or campsite.)
e. The permittee shall notify the appropriate local Search and Rescue (e.g., Nuiqsut Search and Rescue, Atqasuk Search and Rescue) of their current operational location within the NPR-A on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips and access routes accordingly. Identification of the appropriate Search and Rescue offices to be contacted can be obtained from the NPR-A Subsistence Advisory Panel.

Orientation Programs Associated with Permitted Activities:

I-1 Required Operating Procedure
Objective: Minimize cultural and resource conflicts.
Requirement/Standard: All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, ROPs, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. **The proposed orientation program shall be submitted to the AO for review and approval and should:**
a. provide sufficient detail to notify personnel of applicable stipulations and ROPs as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.
b. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.
c. Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.
d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.
e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.
f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.
g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.
h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.
i. Include a module discussing bear interaction plans to minimize conflicts between bears and humans.

k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the NSB Health Department for review and comment.
l. Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the NSB Health Department for review and comment.

BLM Alaska State Office Seismic Stipulations

The permittee will conduct all activities in compliance with the terms and conditions of this permit, including the "Stipulations," "Special Provisions," and the approved "Application for Permit," which are attached to and incorporated into this permit.

I. Reports on Operations

A. Under the provisions of 43 CFR 3152.6, the permittee must submit to the Authorized Officer a final report within 30 days after the completion of operations. The final report must contain the following:

1. A description of the work performed including number of line miles or **3D seismic data volume** acquired;

2. Chart(s), map(s), or plat(s) in PDF and ArcGIS compatible format depicting the areas and blocks in which any exploration or scientific research activities were conducted. These graphics must clearly indicate the location of the activities so that the data produced from the activities can be accurately located and identified;

3. The dates on which the actual geophysical exploration or scientific research activities were performed;

4. A narrative summary of any: (a) hydrocarbon occurrences or environmental hazards observed and (b) adverse effects of the geophysical exploration or scientific research activities on the environment, wildlife, archaeological resources, or other uses of the area in which the activities were conducted;

5. The estimated date on which the processed or interpreted data or information will be available for inspection by the BLM or surface manager;

6. Identification of geocentric ellipsoid (NAD 27 or NAD 83) used as a reference for the data or sample locations; and

7. Such other descriptions of the activities conducted as may be specified by the Supervisor.

C. The last status report and the final report can be combined into one report.

Section II. Submission, Inspection, and Selection of Geophysical Data and Information

A. The permittee must notify the Authorized Officer, in writing, when the permittee has completed the initial processing and interpretation of any geophysical data and information collected under an exploration permit or a scientific research permit that involves developing data and information for proprietary use or sale. If further processing of the data and information is conducted, it is the responsibility of the permittee to keep the most current resulting products available in the event the Authorized Officer requests the current status of data processing. At any time within 10 years after receiving notification of the completion of the acquisition activities conducted under the permit, the Authorized Officer may request that the permittee submit for inspection and possible retention all or part of the geophysical data, processed geophysical information, and interpreted geophysical information.

B. The Authorized Officer will have the right to inspect and select the geophysical data, processed geophysical information, or interpreted geophysical information. This inspection will be performed on the permittee's premises unless the Authorized Officer requests that the permittee submit the data or information to the Authorized Officer for inspection. Such submission must be within 30 days following the receipt of the Authorized Officer's request unless the Authorized Officer authorizes a later delivery date. If the inspection is done on the permittee's premises, the permittee must submit the geophysical data or information selected within 30 days following receipt of the Authorized Officer's request, unless the Authorized Officer grants a longer period of time for delivery. The data or information requested for inspection or selected by the Authorized Officer must be submitted.

C. In the event that a third party obtains geophysical data, processed geophysical information, or interpreted geophysical information from a permittee, or from another third party, by sale, trade, license agreement, or other means:

1. The third party recipient of the data and information assumes the obligations under this section except for notification of initial processing and interpretation of the data and information and is subject to the provisions of 43 CFR 3152 and 3154; and

2. A permittee or third party that sells, trades, licenses, or otherwise provides the data and information to a third party must advise the recipient, in writing, that accepting these obligations is a condition precedent of the sale, trade, license, or other agreement; and

3. Except for license agreements, a permittee or third party that sells, trades, or otherwise provides data and information to a third party must advise the Authorized Officer in writing within 30 days of the sale, trade, or other agreement, including the identity of the recipient of the data and information; or

4. With regard to license agreements, a permittee or third party that licenses data and information to a third party, within 30 days of a request by the Authorized Officer or, must advise the Authorized Officer, in writing, of the license agreement, including the identity of the recipient of the data and information.

D. Each submission of geophysical data, processed geophysical information, and interpreted geophysical information must contain, unless otherwise specified by the Authorized Officer, the following:

1. An accurate and complete record of each geophysical survey conducted under the permit, including a final edited navigation file as an ASCII file in SEG-P (or similar) format on a CD or DVD. The shot point locations shall be in geodetic form (latitude, longitude). If projected location data are provided in addition to the geodetic data, then the projection and zone shall be specified in a header record. Processing flow information and target display polarity must be provided;

2. Full stack PSTM true amplitude or equivalent data and AVO appropriate gathers such as NMO corrected PSTM gathers;

3. All seismic data developed under a permit must be submitted in SEG-Y format and be of a quality suitable for interpreting and reflecting state-of-the-art processing techniques. 3D seimic data is to be ordered by inline. Shot point field for 2D and inline and crossline field for 3-D must be populated in trace header;

4. Other geophysical data, processed geophysical information, and interpreted geophysical information obtained from, but not limited to, special studies such as AVO, VSP, refraction, shear wave, velocity surveys, gravity, magnetics and electromagnetic resistivity imaging data.

E. Geophysical data shall be submitted on USB or NAS (network attached storage) hard drives formatted for Linux operating systems or on optical disks such as DVD/CD.

Section III. Reimbursement to Permittees

A. The permittee or third party will **not** be reimbursed for the costs of acquiring, processing, copying, shipping, or interpreting geophysical information.

Section III IV. Disclosure to Independent Contractors

All submitted data are held proprietary and confidential as per 43 CFR 2.13. However to assist in the management of subsurface resources and their ultimate recovery, BLM-Alaska reserves the right to disclose any data or information acquired from a permittee to an independent contractor or agent for the purpose of reproducing, processing, reprocessing, or interpreting such data or information. When practicable, BLM-Alaska will advise the permittee who provided the data or information of intent to disclose the data or information to an independent contractor or agent. The BLM-Alaska's notice of intent will afford the permittee a period of not less than 5 working days within which to comment on the intended action. When BLM-Alaska so advises a permittee of the intent to disclose data or information to an independent contractor or agent, all other owners of such data or information will be deemed to have been notified of BLM-Alaska's intent. Prior to any such disclosure, the contractor or agent will be required to execute a written commitment not to sell, trade, license, or disclose any data or information to anyone without the express consent of BLM-Alaska.

FF095634
3152.00

Finding of No Significant Impact

Type of Action: Seismic Permit

Serial Number: FF095634

Environmental Assessment Number: DOI-BLM-LLAKF010-2010-0002-EA

Applicant: ConocoPhillips Alaska
700 G Street
Anchorage, Alaska 99501

District: Arctic Field Office

Planning Unit: Northeast National Petroleum Reserve in Alaska (NPR-A)

Lands Involved: (See EA for map)

Context and Intensity of Environmental Impacts

Based upon a review of the EA prepared by the Arctic Field Office and the supporting documents, I have determined that the proposed action will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance as defined at 40 CFR 1508.27. Therefore, an environmental impact statement is not required. We reviewed the context of the proposed action and found that it would not result in any significant effects to resources and values in NPR-A. The need for this project is to allow the applicant to conduct a 3D Seismic Survey in support of oil and gas activities. The objective of this project is a new 3D seismic survey to be acquired over the core of CPAI's Colville River Unit Area. This survey, known as the Alpine 3D Survey, would cover approximately 165 square miles and replace portions of the existing 1996 Colville 3D Survey. The existing 13 year old 3D dataset is at the end of its technical life and has served its intended purpose, whereas a more technically advanced 3D dataset is now needed to improve the subsurface imaging and guide future development decisions. This new 3D survey would reduce risk and benefit the continuing development

drilling program from late 2010 forward, in all areas covered by this program. The proposed Alpine 3D dataset is designed to reduce the uncertainty by increasing spatial and vertical resolution within the Alpine, Kuparuk, Nanuq, & Qannik intervals, resulting in better imaging and definition of the various depositional settings, reservoir faulting and internal stratigraphic reservoir architecture.

The proposed action would authorize ConocoPhillips Alaska through their contractor CGG Veritas to conduct the 3D Seismic Survey. The proposed time frame for this program is January 23rd – May 31, 2010 or tundra closure, whichever comes first.

The following factors have been considered in evaluating significance for this proposal (40 CFR 1508.27):

1. Impacts that may be both beneficial and adverse: The beneficial effects of the proposed action include the information obtained from the 3D Survey that would reduce risk and benefit the continuing development drilling program from late 2010 forward, in all areas covered by this program. Adverse impacts could be temporary displacement of subsistence hunters and temporary disturbance to bears.

2. Degree of effect on public health and safety: The proposed action would have no effect on public health and safety.

3. Unique characteristics of the geographic area such as proximity to cultural or ecologically critical areas: The proposed action, which would be implemented with mitigation and existing protections, would not impact any cultural or ecologically critical areas. In addition the proposed action would not impact park lands or prime farmlands. Impacts to wetlands and floodplains would be localized and not significant, based on impact analysis done in compliance with Executive Orders 11990 and 11988.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial: There is no scientific controversy over the nature of the environmental impacts of the proposed action.

5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk: No highly uncertain or unknown risks to the human environment were identified.

6. Degree to which the action may establish a precedent for future actions with significant effect: The proposed action was considered within the context of past, present, and reasonably foreseeable actions and no significant cumulative effects are expected.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: No individually or cumulatively significant impacts were

identified for the proposed action. The cumulative effects are analyzed in Section 4.2 of the EA.

8. Degree to which the action may adversely affect district, sites, highways, structures, or other objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources. Approximately 10 known cultural sites are located within the boundaries of the proposed action, all of which are listed on the AHRS. Both ConocoPhillips and CGG Veritas have the AHRS data and are therefore in a position to assure that buffer zones are maintained and the sites protected.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat: A no effect determination for spectacled and Steller's eider and a not likely to adversely affect determination for polar bear for a 1 season winter operation to conduct a 3 dimensional seismic by ConocoPhillips Alaska in NE National Petroleum Reserve-Alaska (NPR-A) during the winter season 2009-1010 was made by BLM, with concurrence of US Fish and Wildlife Service.

The proposed action is not expected to impact salmon or their habitat and is assigned the EFH determination: *not likely to adversely affect*. No further EFH consultation is required.

10. Whether the action threatens a violation of federal, state, local or tribal law, regulation or policy imposed for the protection of the environment, where non-federal requirements are consistent with federal requirements: The proposed action does not violate any known federal, state, local, or tribal law or requirement imposed for the protection of the environment. The evaluation and finding completed to comply with Section 810 of ANILCA found that "This proposed action will not significantly restrict subsistence uses. No reasonably foreseeable and significant decrease in the abundance of harvestable resources or in the distribution of harvestable resources, and no reasonably foreseeable limitations on harvester access will result from the proposed action.

Monitoring and Mitigation

Mitigation measures will be implemented as described in the attached authorization stipulations.

APPROVED:

/s/ Robert W. Schneider Date: January 22, 2010
District Manager